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Abstract

A method for materials processing by means of plasma-inducing high-energy radiation, especially laser radiation, in which the instantaneous intensity of the plasma radiation is measured at plural locations of a vapor capillary.

So that the method can also be performed with perfect welding results on workpieces of very small thickness, shapes of two spaced-apart peak intensity regions (10, 12), or of another type of electromagnetic radiation emitted from the vapor capillary, and of a minimum region (11) that can be formed between these two regions of extreme values are detected metrologically, the so detected shapes of the regions of extreme values are compared with predetermined region shapes, and control of the materials processing operation takes place as a function of deviations of the detected shapes from the predetermined region shapes.